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WSI Occultor Re-Installation

I. Purpose:

This procedure is provided to assist in the reinstallation of WSI Occultor, containing subassemblies SN MPL000103, MPL 000104, MPL000112, and SN MPL000.

II. Cautions and Hazards:

None.

III. Requirements:

None.

IV. Procedure:

A. Mechanical Sequence:

1. Visually inspect the shipping crate (Box #4, 64"L X 47 ½" W X 29" H) for evidence of damage during shipment and note, if any, on receipt documentation.
2. Open shipping crate. Visually inspect status of occultor assembly within and note any evidence of packing and/or securing faults, which could contribute to occultor damage. Note faults, if any, on WSI Fault Report and Repair Document (FRRD) enclosed and call MPL before proceeding. If no faults are apparent, proceed to step 3.
3. Prepare the environmental housing (White Box) for the occultor re-installation. This step involves only the removal of the 1/8" thick, black sunshade to expose the underlying lack foam insulation and four white spacer blocks to insure their proper alignment with the tapped, ¼ -20 occultor tiedown holes in the underlying White Box top plate.
4. Upon concluding the inspections of steps 1, 2, and 3, carefully remove the foam padding which protects the occultor assembly while it is in its shipping crate. Remove the constraining bungee cord, which holds the arc in contact with its support blocks. Visually inspect occultor assembly to verify there are no impediments to its being lifted vertically out of the shipping crate.
5. Remove the four ¼-20 bolts which fasten the Occultor Base Plate to its wooden support frame.
6. Firmly gripping the Occultor Base Plate, slowly lift the Occultor Assembly vertically from the shipping crate. DO NOT LIFT THE OCCULTOR ASSEMBLY BY THE ARCS.

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7. Immediately position the Occultor Assembly over the Environmental Enclosure (white box) and lower it, centered on its spacer blocks, such that the trolley drive end of the arc (which is labeled "North") is to the North.
8. Re-position the black sunshade over the Occultor Base Plate being careful not to scratch the camera's protective dome. Be sure the rubber grommet is properly attached to the edge of the dome clearance dome hole in the center of the sunshade.
9. Insert the eight ¼ X 20 hold down screws through the sunshade and Occultor Base Plate into the Environmental Enclosure To Plate and hand tighten until snug.
10. Install the Arc Drive Plate on the Occultor as instructed in Section D of Set-up instructions (12 July 95 version).
11. This completes the MECHANICAL re-installation of the WSI Occultor Assembly. Visually inspect for normal tightness and alignment of all components before proceeding to the ELECTRICAL hook up. If all is normal, tighten hold down screws securely.

B. Electrical Sequence:

1. Remove ACP from its shipping crate and visually inspect for any damage. Specifically examine all switches and meter faces on the front panel. Examine all connector shells on the rear panel. Examine slide rails on the side panels. If any damage is apparent, note same on enclosed FRRD and advise MPL immediately.
2. If step 1 above indicates no mechanical damage, re-install the ACP into its previous location in the Control Console (Blue Box). Be sure to insert slide rail carefully to avoid jamming. Secure ACP with 10-32 retaining screws.
3. Do the following:
 - Verify the ACP Power Switch is OFF
 - Verify Local Enable Switch is ON
 - Verify ARC and TROLLEY control selection switches are in LOCAL
4. Re-connect electrical cables at ACP rear panel in accordance with the labeling shown in the Interconnecting Cable Diagram (ICD) attached, i.e. connect cables 6402-02-J1 through J5 to receptacles 6402-020P1 through P5.
 - Be sure that all five connectors meet cleanly and lock securely. The Bendix TwistLoc class connectors should lock with finger pressure only. Connector pliers should not be required. Please advise MPL if connector mating seems unreasonably difficult. The 3M forty eight

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pin connectors on the ribbon cable should fit snugly with their restraining clamps in place and locked.

5. Re-connect the electrical cables at the newly installed Occultor Assembly in accordance with the labeling shown in the ICD attached. That is, on the South side, connect the cable labeled "Arc drive" to the left-hand connector plug labeled "Arc drive." Connect the cable labeled "Limit On/Off" to the right-hand connector labeled "Limit On/Off." On the North side, connect the cable labeled "Trolley drive" to the connector plug on the round trolley drive housing. Connect the cable labeled "Limit Switch" to the connector plug on the limit switch housing which is labeled "North."
 - Be sure that all four connectors mate cleanly and lock securely. Note that the Trolley Drive Sub-Assembly and the Arc Limit Switch housing both have receptacles with keyed inserts, i.e. PT02H 10-98P. Although these are -10 size shells with 6 pin inserts as are the PT02H 10-6P, the pin orientations are not the same in the -98 format as in the -6 format. **DO NOT MISTAKE THESE CONNECTORS WITH THE INCORRECT CABLE!**
6. Visually re-inspect all cable connections to verify correct hook-up.
7. At the ACP, verify the switch conditions as set in step 3 above.
8. Turn ACP power Switch ON. Look for the following conditions:
 - a.) Either the fwd or Rev indicator lights may (or may not) come ON.
 - b.) Meter displays come ON
 - c.) Neither ARC nor TROLLEY move from their installed positions.
 - d.) Verify that the ARC position read-out is approximately 10 degrees (as shipped config).
 - e.) Verify that the TROLLEY position read-out is approximately 45 degrees (as shipped config).
 - f.) If d.) and e.) values are abnormal, call MPL.
9. In the ARC control section of ACP:
 - a.) Select FWD direction.
 - b.) Push the left toggle drive switch up to move ARC toward the zenith position (90 degrees). Verify read-out for appropriate change vs. angle, i.e. the readout increases.
 - c.) Park ARC at approximately zenith position and verify that the arc is vertical.
10. In the TROLLEY control section of the ACP:

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- a.) Select FWD direction.
 - b.) Toggle drive switch to move TROLLEY toward the zenith position (90 degrees). Verify read out for appropriate change vs. angle, i.e. verify that the trolley is centered at the top.
 - c.) Park TROLLEY at approximately zenith position.
11. This completes the basic electrical hook-up and check-out of the Occultor /ACP sub-system. If no abnormalities have been observed in this manually controlled sequence, then the system is ready to be put under computer control for final solar tracking evaluation.
 12. Return toggle switches from "Local" to "Computer." Return Local enable key from "On" to "Off."
 13. Turn on computer. It should go through its own start-up sequence. Once it has run for a few minutes, verify that the occultor is approximately centered on the sun.